



BHI Project No. 20180325.001.01.SRVABQ

Survey Control Report for Lubbock Orthophotography

Alan R. Benham, PE, PS, CFedS



May 17, 2018



Introduction:

This control report documents the establishment of aerial photo control for the City of Lubbock Orthophotography Project. Previous control was provided by the City to BHI for incorporation into the flight plan. That control was utilized and repaneled where possible, including previous control set by BHI for prior projects. Due to the changed flight plan footprint, BHI opted to set new control consisting of either a 2" aluminum cap on 5/8"x18" rebar or a PK nail with 2" aluminum washer. New control was stamped as noted herein. Control was established with NGS OPUS solutions and Real Time Kinematic GPS double observations to remaining points. Subsequent occupations were validated to previous RTK or OPUS monumentation.

Project Control Process Flowchart:

See attachment

Project Control Specifications:

Units:	US Survey Foot
Horizontal Datum:	NAD_83(2011)(EPOCH:2010.0000)
Vertical Datum:	NAVD88
Geoid Model:	GEOID12B
Projection:	Lambert Conformal
State Plane and/or UTM Zone:	Texas North Central (4202)
Basis of Bearing:	Grid Bearings
Project Combined Factor:	N/A
Modification Method Used:	N/A
Field Methodology:	RTK
Equipment Used:	Trimble GPS Equipment
Control Set Date:	January 2018
Observation Date:	January 2018
Adjustment/ Publication Date:	May 17, 2018

I, Alan R. Benham, New Mexico Professional Surveyor No. 15700, do hereby certify that this Control Survey Report was prepared by me or under my direct supervision based on an actual survey on the ground as described herein; that I am responsible for this survey; and that the survey and report meets the minimum standards for surveying in New Mexico.



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 Bohannon Huston, Inc.
 Courtyard I / 7500 Jefferson St. NE
 Albuquerque, NM 87109-4335
 (505).823.1000

May 17, 2018

Date




Adjusted Coordinate Listing:

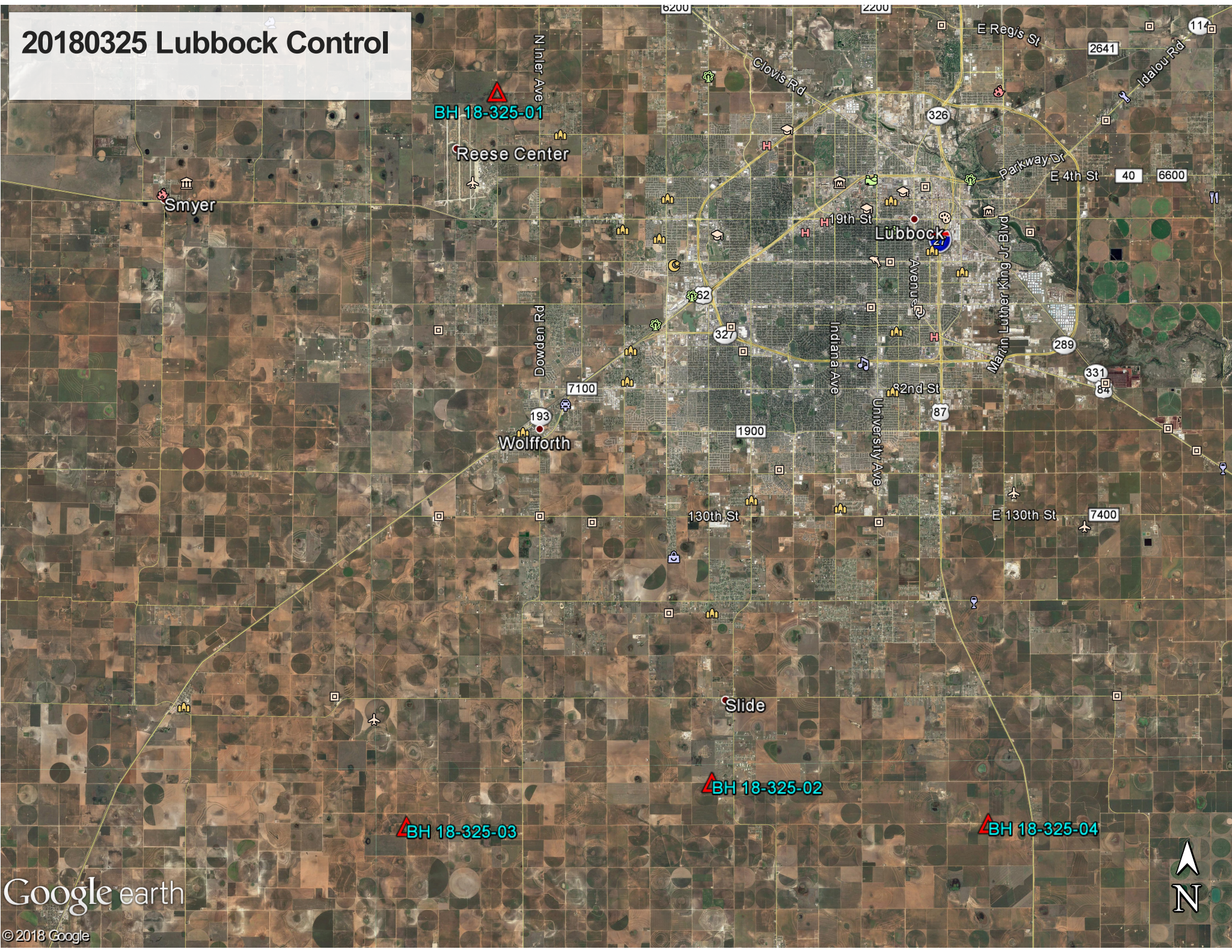
See Attached Control Datasheets

POINT	LATITUDE	LONGITUDE	ELLIPSOID (USFt)	GEOID	ORTHOMETRIC HEIGHT (USFt)	MODIFIED NORTHING (USFt)	MODIFIED EASTING (USFt)	DESCRIPTION
BH 18-325-01	N 33° 37' 16.69862"	W 102° 01' 35.81892"	3229.954	GEOID12A	3310.941	7290818.445	895151.268	2" ALUMINUM CAP
BH 18-325-02	N 33° 23' 5.64883"	W 101° 56' 17.72557"	3167.185	GEOID12A	3247.361	7203957.034	919219.587	2" ALUMINUM CAP
BH 18-325-03	N 33° 22' 11.21384"	W 102° 03' 48.25333"	3208.363	GEOID12A	3287.811	7199731.334	880855.413	2" ALUMINUM CAP
BH 18-325-04	N 33° 22' 14.56139"	W 101° 49' 29.48731"	3113.875	GEOID12A	3194.685	7197682.407	953651.486	2" ALUMINUM CAP

Geospatial Positional Accuracy Report:

POINT	HORIZONTAL POSITIONAL ACCURACY (FT)	VERTICAL POSITIONAL ACCURACY (FT)
BH 18-325-01	0.040	0.047
BH 18-325-02	0.056	0.088
BH 18-325-03	0.065	0.093
BH 18-325-04	0.063	0.075

20180325 Lubbock Control



Control Station Data

Name of Station: **BH 18-325-01**

Establishing Group: Bohannon Huston, Inc.

Observation Date: 9-Jan-2018

BST Project #: 20180325

Project Name: Lubbock Orthophotography 2018

Station Data

Type/Composition: 2" Aluminum Cap

Station Height: 0.00 US Ft

Stamping: BH 18-325-01

Horizontal Method: Real-Time Kinematic

Vertical Method: Real-Time Kinematic

Coordinate Data

Horizontal Datum:	Geodetic (NAD83)	Grid (TX83-NCF)	Alternate (TX83-NCF)
Latitude Northing Y:	N 33° 37' 16.69862"	7,290,818.445 US Ft	7,290,818.445 US Ft
Longitude Easting X:	W 102° 01' 35.81892"	895,151.268 US Ft	895,151.268 US Ft
Vertical Datum:	Ellipsoid (GRS80)	Ellipsoid (GRS80)	Orthometric (NAVD88, GEOID12B)
Elevation:	984.492 m	3,229.953 US Ft	3,310.941 US Ft

Location

County & State: Lubbock, TX

Land Grant(s): None

Note(s):

Section:

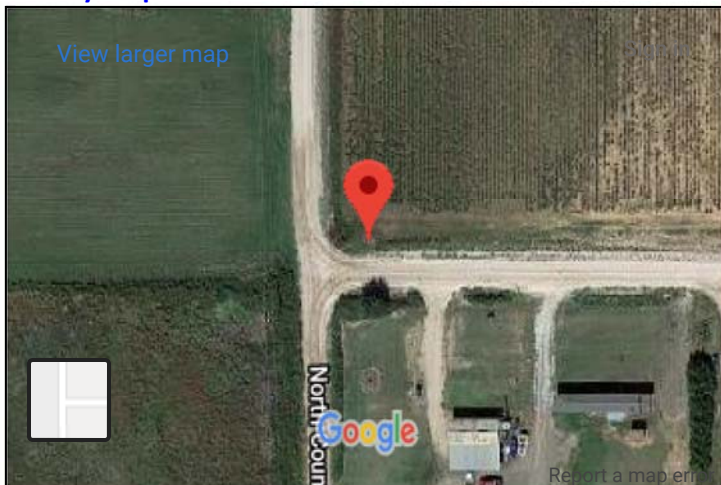
Location Map:



Vicinity Photo (Looking North):



Vicinity Map:



Close Up Photo:



Control Station Data

Name of Station: BH 18-325-02

Establishing Group: Bohannon Huston, Inc.

Observation Date: 9-Jan-2018

BST Project #: 20180325

Project Name: Lubbock Orthophotography 2018

Station Data

Type/Composition: 2" Aluminum Cap

Station Height: 0.00 US Ft

Stamping: BH 18-325-02

Horizontal Method: Real-Time Kinematic

Vertical Method: Real-Time Kinematic

Coordinate Data

Horizontal Datum:	Geodetic (NAD83)	Grid (TX83-NCF)	Alternate (TX83-NCF)
Latitude Northing Y:	N 33° 23' 05.64883"	7,203,957.034 US Ft	7,203,957.034 US Ft
Longitude Easting X:	W 101° 56' 17.72557"	919,219.587 US Ft	919,219.587 US Ft
Vertical Datum:	Ellipsoid (GRS80)	Ellipsoid (GRS80)	Orthometric (NAVD88, GEOID12B)
Elevation:	965.360 m	3,167.184 US Ft	3,247.361 US Ft

Location

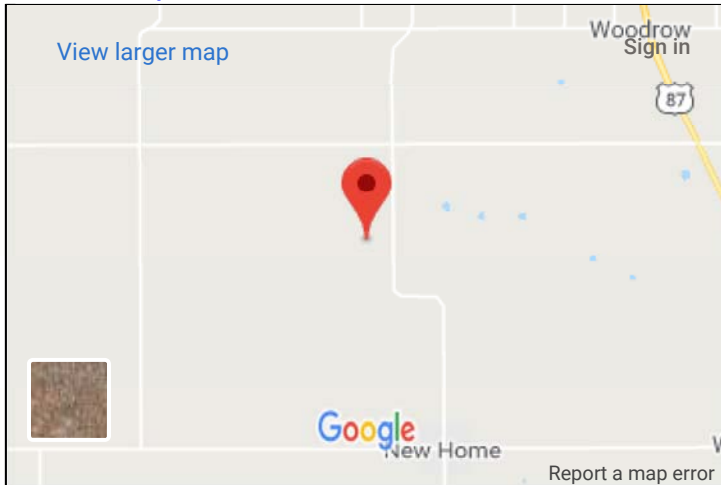
County & State: Lynn, TX

Land Grant(s): None

Note(s):

Section:

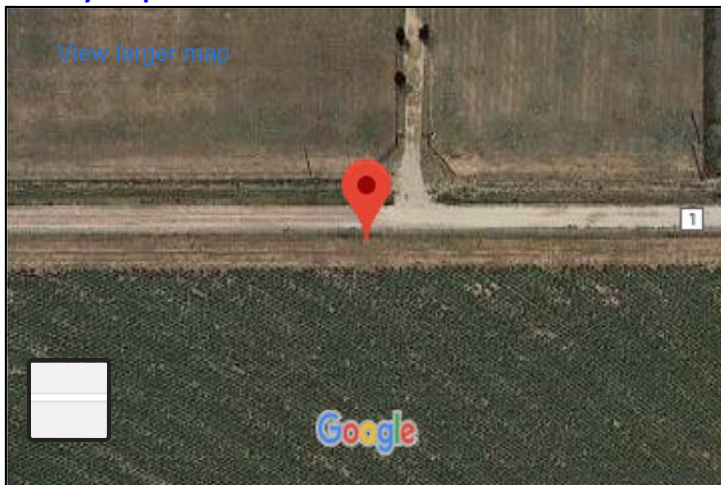
Location Map:



Vicinity Photo (Looking South):



Vicinity Map:



Close Up Photo:



Control Station Data

Name of Station: **BH 18-325-03**

Establishing Group: Bohannon Huston, Inc.

Observation Date: 9-Jan-2018

BST Project #: 20180325

Project Name: Lubbock Orthophotography 2018

Station Data

Type/Composition: 2" Aluminum Cap

Station Height: 0.00 US Ft

Stamping: BH 18-325-03

Horizontal Method: Real-Time Kinematic

Vertical Method: Real-Time Kinematic

Coordinate Data

Horizontal Datum:	Geodetic (NAD83)	Grid (TX83-NCF)	Alternate (TX83-NCF)
Latitude Northing Y:	N 33° 22' 11.21384"	7,199,731.334 US Ft	7,199,731.334 US Ft
Longitude Easting X:	W 102° 03' 48.25333"	880,855.413 US Ft	880,855.413 US Ft
Vertical Datum:	Ellipsoid (GRS80)	Ellipsoid (GRS80)	Orthometric (NAVD88, GEOID12B)
Elevation:	977.911 m	3,208.362 US Ft	3,287.811 US Ft

Location

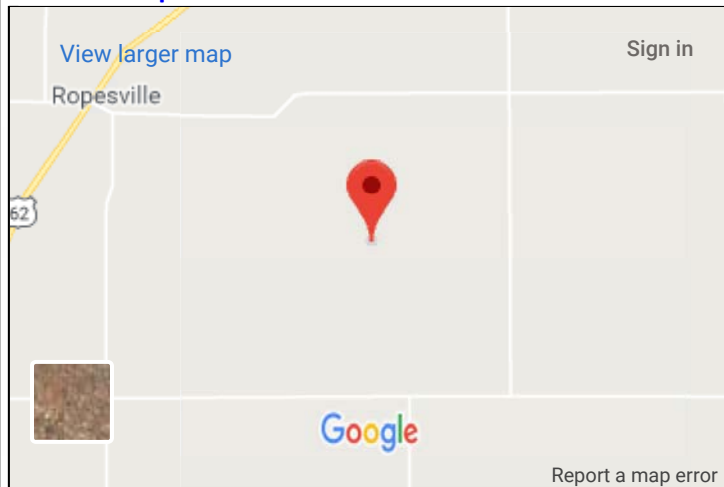
County & State: Lynn, TX

Land Grant(s): None

Note(s):

Section:

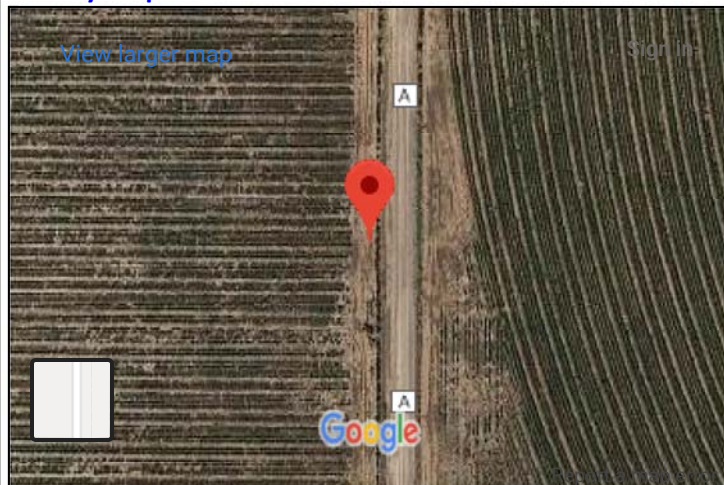
Location Map:



Vicinity Photo (Looking North):



Vicinity Map:



Close Up Photo:



Control Station Data

Name of Station: **BH 18-325-04**

Establishing Group: Bohannon Huston, Inc.

Observation Date: 9-Jan-2018

BST Project #: 20180325

Project Name: Lubbock Orthophotography 2018

Station Data

Type/Composition: 2" Aluminum Cap

Station Height: 0.00 US Ft

Stamping: BH 18-325-04

Horizontal Method: Real-Time Kinematic

Vertical Method: Real-Time Kinematic

Coordinate Data

Horizontal Datum:	Geodetic (NAD83)	Grid (TX83-NCF)	Alternate (TX83-NCF)
Latitude Northing Y:	N 33° 22' 14.56139"	7,197,682.407 US Ft	7,197,682.407 US Ft
Longitude Easting X:	W 101° 49' 29.48731"	953,651.486 US Ft	953,651.486 US Ft
Vertical Datum:	Ellipsoid (GRS80)	Ellipsoid (GRS80)	Orthometric (NAVD88, GEOID12B)
Elevation:	949.111 m	3,113.875 US Ft	3,194.685 US Ft

Location

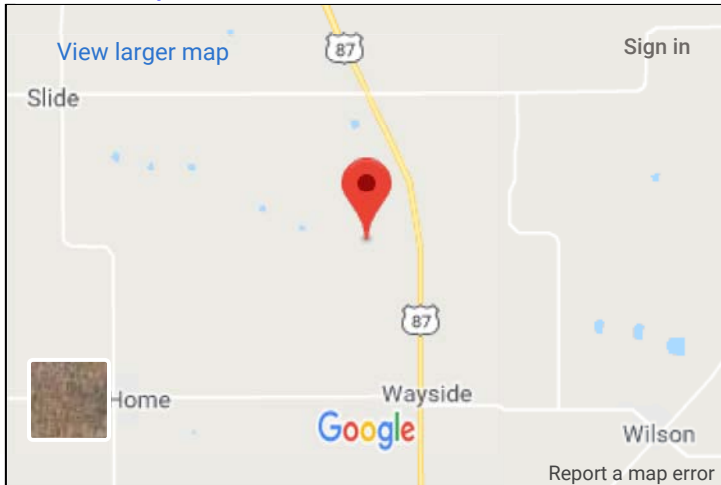
County & State: Lynn, TX

Land Grant(s): None

Note(s):

Section:

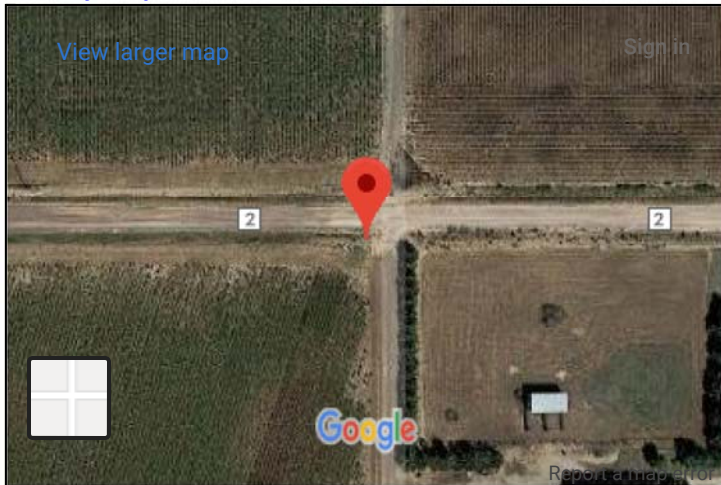
Location Map:



Vicinity Photo (Looking South):



Vicinity Map:



Close Up Photo:



RTK PROCESS

